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Application Serial No.08/897,217
Filing Date7/14/97
Inventorship..... Dean
Applicant..... Microsoft Corporation
Group Art Unit2126
ExaminerBullock Jr., L.
Attorney's Docket No. MS1-796US
Title: Interprocess Communication Mechanism For Heterogeneous Computer
Processes

APPEAL BRIEF

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Pursuant to 37 C.F.R. §1.192, Applicant hereby submits an appeal brief for
Application No. 08/897,217. A Notice of Appeal was filed March 3, 2004.
Accordingly, Applicant appeals to the Board of Patent Appeals and Interferences
seeking review of the Examiner's rejections.

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1 **(1) Real Party in Interest**

2 The real party in interest is the Microsoft Corporation, the assignee of all
3 right and title to the subject invention.

4
5 **(2) Related Appeals and Interferences**

6 Appellant is not aware of any other appeals or interferences which will
7 directly affect, be directly affected by, or otherwise have a bearing on the Board's
8 decision to this pending appeal.

9
10 **(3) Status of Claims**

11 Claims 1-15 and 22-36 stand rejected and are pending in this Application.
12 Claims 16-21 have been canceled and no claims have been allowed. Claims 1,
13 3-4, 6, 8, 11, 13, 15, 22-23, and 28 have been previously amended and are set forth
14 in the Appendix of Appealed Claims on page 15 with the remaining claims as
15 originally presented or added.

16 All of the pending claims are subject to this appeal and stand rejected under
17 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,012,083 to
18 Savitzky et al. (hereinafter, "Savitzky"), in view of a document entitled "Java
19 Developer's Guide" (1996) to Jaworski (hereinafter, "Jaworski"), as set forth in a
20 Final Office Action dated September 8, 2003.

21
22 **(4) Status of Amendments**

23 A final rejection was issued on September 8, 2003 whereupon Applicant
24 responded to address the 35 U.S.C. §103(a) rejections of pending claims 1-15 and
25 22-36. Subsequently, an Advisory Action was issued on February 2, 2004

1 dismissing Applicant's traversal and maintaining the rejection of claims 1-15 and
2 22-36. No other amendments have been filed subsequent to the Examiner's final
3 rejection or ensuing Advisory Action.

4 5 **(5) Summary of Invention**

6 The present Application describes receiving a request for a document from
7 an applet, where the request specifies a function, the execution of which performs
8 a task that is unrelated to both generation and retrieval of any document specified
9 in the request. An interprocess communication mechanism is described in which
10 applets can receive and respond to processing requests of other computer
11 processes, and in which the applets can send processing requests to other computer
12 processes without requiring modification of applet viewers (*Specification* p.5).
13 Additionally, computer system security is preserved with the interprocess
14 communication because an applet is denied direct access to computer system
15 resources (*Specification* p.5, lines 24-25).

16 An applet processing request can be a remote procedure call (RPC) that is
17 received as a URL. If a URL is received as an RPC request, then the URL is
18 parsed into the RPC request (*Specification* p.10, lines 2-11). An example of a
19 URL representing an RPC request is:

20 http://serverhost:7123/function=function.name&arg1=arg1.data&arg2=arg2
21 .data&arg3=arg3.data (*Specification* p.10, line 16).

22 The 'http' indicates that the URL specifies a document to be retrieved
23 according to HTTP (*Specification* p.10, lines 19-20). The URL identifies a
24 computer system to which the URL is directed, and the remainder of the URL
25 specifies an RPC function and provides arguments as inputs to the specified RPC

1 function (*Specification* p.10, line 25 to p.11, line 2).

2 Execution of the RPC function specified in the URL is invoked where the
3 arguments are parsed and input to the RPC function. As a result, the identified
4 RPC function performs the task requested by the applet (*Specification* p.11, lines
5 20-28). Accordingly, the function specified in the request performs a task which
6 is unrelated to the generation and retrieval of a document specified according to
7 the document retrieval protocol. Further, the function can be a processing request
8 from an independently executing computer process, or a task incorporated into a
9 larger task or RPC process performed by an applet (*Specification* p.5, lines 26-28;
10 p.8, lines 20-23).

11
12 **(6) Issue**

13 Whether pending claims 1-15 and 22-36 are properly rejected under
14 35 U.S.C. §103(a) as being unpatentable over Savitzky in view of Jaworski?

15
16 **(7) Grouping of Claims**

17 Claims 1-15 and 22-36 stand rejected under 35 U.S.C. §103(a). This claim
18 grouping, however, contains claims that are separately patentable which do not
19 stand or fall with the group. The claim groupings are as follows:

20
21 A. Claims 1-15, 22, and 33-36 stand or fall together.

22 B. Claims 23-32 stand or fall together.
23
24
25

1 **(8) Argument**

2 Claims 1-15 and 22-36 stand rejected under 35 U.S.C. §103(a) as being
3 unpatentable over Savitzky in view of the “Java Developer’s Guide” to Jaworski.
4 Applicant respectfully disagrees.

5 Savitzky describes a third-party computing system that is interposed
6 between a Web client and a Web server to interact with the client and the server to
7 transfer documents (*Savitzky* col.3, lines 32-37). The Web client and the Web
8 server communicate documents via the third computing system with HTTP over a
9 communication channel, such as the Internet (*Savitzky* col.5, lines 6-12).

10 Savitzky refers to applets, stating that “client-side code execution is limited
11 to documents in which a server has included applets and is limited to use with
12 applet-aware browsers” (*Savitzky* col.2, lines 41-43). This is essentially described
13 in the “Background” section of Applicant’s Specification and is an example of the
14 very prior art that Applicant sought to overcome.

15 Applets, by their very nature, raise security issues for local computer
16 systems. In general, computer programs can be configured to cause harm to the
17 local computer system (*Specification* p.2, lines 24-26). Applet viewers prevent
18 harm from execution of an applet. For example, applets are prevented from
19 writing data to any persistent storage, thus protecting current contents of the
20 persistent storage (*Specification* p.3, lines 2-7). A disadvantage of the isolation of
21 applets is that other computer processes executing concurrently with and
22 independently of the applet viewer cannot communicate with the applets
23 (*Specification* p.3, line 28 to p.4, line 1).

24 The second reference cited by the Office is Jaworski. The reference
25 describes a Web server program that receives a request from a Web browser

1 (i.e., a *GET* method), locates a specified resource, and returns the requested
2 resource data to the browser (*A Web Server*, p.521). Jaworski provides an
3 example of how to implement and test the simple Web server program
4 (*WebServerApp*) to receive a request from a remotely connected Web browser and
5 return a file or document (pp. 521-526).

6
7 **(A) The combination of Savitzky and Jaworski does not teach a**
8 **“same computer system” environment.**

9
10 Claim 1 is representative of claim grouping *A* (claims 1-15, 22, and 33-36),
11 and claim 23 is representative of claim grouping *B* (claims 23-32).

12 Claim 1 describes a computer system in which an applet and applet viewer
13 are executed. The applet executes within the applet viewer and serves remote
14 procedure calls. A request is received from the applet which specifies a function,
15 and the function is executed in the same computer system that executes the applet
16 and applet viewer.

17 Claim 23 describes a computing device in which an instruction set and a
18 computer process are executed. The instruction set executes within the computer
19 process and serves remote procedure calls. A request is received from the
20 instruction set which specifies a function, and the function is executed in the
21 computing device.

22 Savitzky and/or Jaworski do not teach the elements recited in claims 1 and
23 23 in a single computer system or computing device, respectively. The Office
24 recognizes that Savitzky describes a client and server system that communicates
25 information between the systems, and does not teach the combination of elements

1 recited in claims 1 and 23 in a “same computer system” environment (*Office*
2 *Action* pp.2-3).

3 Specifically, Savitzky describes a third-party computing system that is
4 interposed between a Web client and a Web server to interact with the client and
5 the server to transfer documents (*Savitzky* col.3, lines 32-37). The Web client and
6 the Web server communicate documents via the third computing system with
7 HTTP over a communication channel, such as the Internet (*Savitzky* col.5, lines
8 6-12).

9 Similarly, Jaworski describes a Web server program that receives a request
10 from a remotely connected Web browser and returns requested resource data, such
11 as a file or a document, to the Web browser (*Jaworski*, p.521-526). The Office
12 contends that the Web browser and the Web server are stored on the same system
13 in Jaworski (*Office Action* p.3). However, Jaworski describes that HTTP supports
14 Web browser requests and that a response to a remote Web browser is an HTTP
15 format response (*Jaworski*, p.521). The Office also cites Jaworski for a browser
16 client that is a delivery mechanism for an embedded client (applet) (*Office Action*
17 p.3; *Jaworski*, p.563). However, the browser network client that includes an
18 embedded client is a remote system to a Web server (*Jaworski*, p.563).

19 Accordingly, claim grouping *A* (claims 1-15, 22, and 33-36) and claim
20 grouping *B* (claims 23-32) are allowable over the Savitzky-Jaworski combination
21 for at least the reason that the references do not teach or suggest the combination
22 of elements within a “same computer system” as recited in claim 1, or within a
23 single computing device as recited in claim 23.

1 **(B) The combination of Savitzky and Jaworski does not teach that a**
2 **request for a document specifies a function, execution of which**
3 **is unrelated to any document specified in the request.**

4
5 Claim 1 is representative of claim grouping A (claims 1-15, 22, and 33-36).

6
7 Claim 1 recites a method for serving remote procedure calls from an
8 applet which executes within an applet viewer which in turn executes in a
9 computer system that is serving said remote procedure calls, the method
10 comprising:

11 receiving from the applet which executes in the same computer
12 system that serves said remote procedure calls, a request for a document
13 according to a document retrieval protocol implemented on a computer
14 network;

15 determining that the request specifies a function which is defined
16 within a computer process executing independently of the applet and applet
17 viewer and which includes one or more computer instructions, execution of
18 which performs a task which is unrelated to both generation and retrieval of
19 any document specified in the request; and

20 executing the function in the same computer system that is executing
21 said applet and applet viewer to thereby cause execution of the one or more
22 computer instructions in response to receipt of the request.

23 The Savitzky-Jaworski combination does not teach or suggest both a
24 request for a document and “determining that the request specifies a function...,
25 execution of which performs a task which is unrelated to both generation and
26 retrieval of any document specified in the request”, as recited in claim 1. For
27 example, Savitzky describes requests for documents such as a request for an
28 existing document or a request to dynamically generate a document when a
29 request for the document is received (*Savitzky* col.1, lines 63-66). Savitzky returns

1 either an existing document or a dynamically generated document in response to a
2 request for the document (*Savitzky* col.1, lines 63-66; col.2, lines 1-14). Further,
3 Jaworski describes that a Web server program returns a file or a document in
4 response to a request from a Web browser (*Jaworski*, p.521-526).

5 The Office states that Savitzky describes a client sending a document
6 request to a server for a document in the form of a URL to execute a script that
7 that is defined in a program on the server (*Office Action* p.2; *Savitzky* col.2, lines
8 1-5). Thus, the Office concludes that since the request is a request to execute a
9 script and not a request for a document, the request is unrelated to any generation
10 or retrieval of a document (*Office Action* p.2)

11 Applicant disagrees, however, because the Office disregards that Savitzky
12 continues the description with “[t]he server generates a document in accordance
13 with the program and returns that document to the browser.” (*Savitzky* col.2, lines
14 5-7). The server executes the script to generate the document according to the
15 program that includes the script (*Savitzky* col.2, lines 5-10). This is expressly
16 contrary to the execution of a function “which performs a task which is *unrelated*
17 to both generation and retrieval of any document specified in the request”, as
18 recited in claim 1. To return a document to a client browser, a request in Savitzky
19 to dynamically generate the document is related to the retrieval of that document.

20 Further, the Office contradicts the rejection of claim 1 and recognizes that
21 Savitzky is deficient when stating that “it is inherent that the script [in a Savitzky
22 request] has instructions that are thereby executed when invoked in order *to*
23 *generate the document*” (*Office Action* p.2). Accordingly, Savitzky teaches away
24 from receiving a request for a document and performing a task which is unrelated
25 to the retrieval of any document, as recited in claim 1.

1 The Office does not cite Jaworski for a request that specifies a function,
2 “execution of which performs a task which is unrelated to both generation and
3 retrieval of any document specified in the request”, as recited in claim 1. As
4 stated above, Jaworski describes a Web server program that receives a request
5 from a remotely connected Web browser and returns requested resource data, such
6 as a file or a document, to the Web browser (*Jaworski*, p.521-526).

7 Accordingly, claim grouping *A* (claims 1-15, 22, and 33-36) is allowable
8 over the Savitzky-Jaworski combination for at least the reason that the references
9 do not teach or suggest the combination of elements with respect to a request for a
10 document as recited in claims 1-15, 22, and 33-36.

1 (C) The combination of Savitzky and Jaworski does not teach that a
2 request for a data file specifies a function, execution of which is
3 unrelated to any data file specified in the request.
4

5 Claim 23 is representative of claim grouping B (claims 23-32).
6

7 Claim 23 recites a method for serving remote procedure calls
8 received from an instruction set that executes within a first computer
9 process, the first computer process executing in a computing device that
10 serves the remote procedure calls, the method comprising:

11 receiving a request for a data file from the instruction set, the request
12 according to a data file retrieval protocol;

13 determining that the request for the data file specifies a function
14 which is defined within a second computer process executing in the
15 computing device independently of the instruction set and of the first
16 computer process, the function including one or more computer
17 instructions, execution of which performs a task which is unrelated to both
18 generation and retrieval of any data file specified in the request; and

19 executing the function in the computing device to execute the one or
20 more computer instructions in response to receipt of the request.
21

22 The Savitzky-Jaworski combination does not teach or suggest both a
23 request for a data file and “determining that the request for the data file specifies a
24 function..., execution of which performs a task which is unrelated to both
25 generation and retrieval of any data file specified in the request”, as recited in
claim 23. As stated above in response to the rejection of claim 1, Savitzky
describes returning either an existing document or a dynamically generated
document in response to a request for the existing document or a request to
dynamically generate the document (*Savitzky* col.1, lines 63-66; col.2, lines 1-14).

1 Further, Jaworski describes that a Web server program returns a file or a document
2 in response to a request from a Web browser (*Jaworski*, p.521-526).

3 Similar to the rejection of claim 1, the Office contends that Savitzky
4 teaches a request to execute a script and not a request for a document, where the
5 request is unrelated to any generation or retrieval of a document (*Office Action*
6 p.5). Applicant disagrees because the Office disregards that Savitzky continues
7 the description with “[t]he server generates a document in accordance with the
8 program and returns that document to the browser.” (*Savitzky* col.2, lines 5-7).
9 The server executes the script to generate the document according to the program
10 that includes the script (*Savitzky* col.2, lines 5-10). This is expressly contrary to
11 the execution of a function “which performs a task which is *unrelated* to both
12 generation and retrieval of any data file specified in the request”, as recited in
13 claim 23. To return a document to a client browser, a request in Savitzky to
14 dynamically generate the document is related to the retrieval of that document.

15 Further, the Office contradicts the rejection of claim 23 and recognizes that
16 Savitzky is deficient when stating that “it is inherent that the script [in a Savitzky
17 request] has instructions that are thereby executed when invoked in order *to*
18 *generate the document*” (*Office Action* p.5). Accordingly, Savitzky teaches away
19 from receiving a request for a data file and performing a task which is unrelated to
20 the retrieval of any data file, as recited in claim 23.

21 The Office does not cite Jaworski for a request that specifies a function,
22 “execution of which performs a task which is unrelated to both generation and
23 retrieval of any data file specified in the request”, as recited in claim 23. As stated
24 above, Jaworski describes a Web server program that receives a request from a
25 remotely connected Web browser and returns requested resource data, such as a

1 file or a document, to the Web browser (*Jaworski*, p.521-526).


2 Accordingly, claim grouping *B* (claims 23-32) is also allowable over the
3 Savitzky-Jaworski combination for at least the reason that the references do not
4 teach or suggest the combination of elements with respect to a request for a data
5 file as recited in claims 23-32.

6
7 **Conclusion**

8 The Office's basis and supporting rationale for the 35 U.S.C. §103(a)
9 rejection is not supported by the express teachings of the combined Savitzky and
10 Jaworski references. Applicant respectfully requests that the 35 U.S.C. §103(a)
11 rejection be overturned and that pending claims 1-15 and 22-36 be allowed to
12 issue.

13
14 Respectfully Submitted,

15
16 Dated: May 3, 2004

17 By: 
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(509) 324-9256 x 210

1 **(9) Appendix of Appealed Claims**

2

3 1. A method for serving remote procedure calls from an applet which

4 executes within an applet viewer which in turn executes in a computer system that

5 is serving said remote procedure calls, the method comprising:

6 receiving from the applet which executes in the same computer system that

7 serves said remote procedure calls, a request for a document according to a

8 document retrieval protocol implemented on a computer network;

9 determining that the request specifies a function which is defined within a

10 computer process executing independently of the applet and applet viewer and

11 which includes one or more computer instructions, execution of which performs a

12 task which is unrelated to both generation and retrieval of any document specified

13 in the request; and

14 executing the function in the same computer system that is executing said

15 applet and applet viewer to thereby cause execution of the one or more computer

16 instructions in response to receipt of the request.

17

18 2. The method of Claim 1 wherein the step of determining comprises:

19 determining that the request includes a document specification which is in a

20 portion of a name space reserved for function requests.

21

22 3. The method of Claim 1 further comprising:

23 returning to the applet result data produced by execution of the function.

24

25

1 4. The method of Claim 3 wherein the step of returning comprises:
2 forming a document which includes the data; and
3 sending the document to the applet.

4
5 5. The method of Claim 1 wherein the document retrieval protocol is
6 HTTP.

7
8 6. A computer readable medium useful in association with a computer
9 system which includes a processor and a memory, the computer readable medium
10 including computer instructions which are configured to cause the computer to
11 serve remote procedure calls from an applet, which executes within an applet
12 viewer which in turn executes in the computer system that is serving said remote
13 procedure calls, by performing the steps of:

14 receiving from the applet which executes in the same computer system that
15 serves said procedure calls, a request for a document according to a document
16 retrieval protocol implemented on a computer network;

17 determining that the request specifies a function which is defined within a
18 computer process executing independently of the applet and applet viewer and
19 which includes one or more selected computer instructions, execution of which
20 performs a task which is unrelated to both generation and retrieval of any
21 document specified in the request; and

22 executing the function in the same computer system that is executing said
23 applet and applet viewer to thereby cause execution of the one or more selected
24 computer instructions in response to receipt of the request.

1 7. The computer readable medium of Claim 6 wherein the step of
2 determining comprises:

3 determining that the request includes a document specification which is in a
4 portion of a name space reserved for function requests.
5

6 8. The computer readable medium of Claim 6 where the computer
7 instructions are further configured to cause the computer to serve remote
8 procedure calls by further performing the step of:

9 returning to the applet result data produced by execution of the function.
10

11 9. The computer readable medium of Claim 8 wherein the step of
12 returning comprises:

13 forming a document which includes the result data; and
14 sending the document to the applet.
15

16 10. The computer readable medium of Claim 6 wherein the document
17 retrieval protocol is HTTP.
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1 11. A computer system comprising:
2 a processor;
3 a memory operatively coupled to the processor; and
4 a computer process which executes in the processor from the memory and
5 which, when executed, serves remote procedure calls received from an applet
6 which executes within an applet viewer which in turn executes in the processor
7 from the memory concurrently and independently from the computer process,
8 wherein the computer process serves the remote procedure calls by performing the
9 steps of:

10 receiving from the applet which executes in the same computer system that
11 serves remote procedure calls, a request for a document according to a document
12 retrieval protocol implemented on a computer network;

13 determining that the request specifies a function which is defined within the
14 computer process and which includes one or more computer instructions,
15 execution of which performs a task which is unrelated to both generation and
16 retrieval of any document specified in the request; and

17 executing the function in the same computer system that is executing said
18 applet and applet viewer to thereby cause execution of the one or more computer
19 instructions in response to receipt of the request.

20
21 12. The computer system of Claim 11 wherein the step of determining
22 comprises:

23 determining that the request includes a document specification which is in a
24 portion of a name space reserved for function requests.

1 **13.** The computer system of Claim 11 where the computer process
2 serves remote procedure calls by further performing the step of:

3 returning to the applet result data produced by execution of the function.
4

5 **14.** The computer system of Claim 13 wherein the step of returning
6 comprises:

7 forming a document which includes the result data; and

8 sending the document to the applet.
9

10 **15.** The computer system of Claim 11 wherein the document retrieval
11 protocol is HTTP.
12

13 **22.** The method of Claim 1, wherein the function further comprises a
14 Remote Procedure Call.
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1 **23.** A method for serving remote procedure calls received from an
2 instruction set that executes within a first computer process, the first computer
3 process executing in a computing device that serves the remote procedure calls,
4 the method comprising:

5 receiving a request for a data file from the instruction set, the request
6 according to a data file retrieval protocol;

7 determining that the request for the data file specifies a function which is
8 defined within a second computer process executing in the computing device
9 independently of the instruction set and of the first computer process, the function
10 including one or more computer instructions, execution of which performs a task
11 which is unrelated to both generation and retrieval of any data file specified in the
12 request; and

13 executing the function in the computing device to execute the one or more
14 computer instructions in response to receipt of the request.

15
16 **24.** A method as recited in claim 23, wherein determining that the
17 request for the data file specifies a function comprises determining that the request
18 includes a data file specification which is in a portion of a name space reserved for
19 function requests.

20
21 **25.** A method as recited in claim 23, further comprising returning result
22 data produced by execution of the function to the first computer process.

1 26. A method as recited in claim 25, wherein returning the result data
2 comprises generating a document which includes the result data, and sending the
3 document to the first computer process.

4
5 27. A method as recited in claim 23 wherein the data file retrieval
6 protocol is HTTP.

7
8 28. A computer system comprising:
9 a processor;
10 a memory operatively coupled to the processor; and
11 a first computer process configured to execute in the processor from the
12 memory, the first computer process further configured to serve remote procedure
13 calls received from an instruction set that executes within a second computer
14 process, the second computer process configured to execute in the processor from
15 the memory concurrently and independently of the first computer process, wherein
16 the first computer process serves the remote procedure calls by:
17 receiving a request for a data file from the instruction set, the request
18 according to a data file retrieval protocol;
19 determining that the request for the data file specifies a function which is
20 defined within the first computer process, the function including one or more
21 computer instructions, execution of which performs a task which is unrelated to
22 both generation and retrieval of any data file specified in the request; and
23 executing the function in the computing device to execute the one or more
24 computer instructions in response to receipt of the request.
25

1 **29.** A computer system as recited in claim 28, wherein determining that
2 the request for the data file specifies a function comprises determining that the
3 request includes a data file specification which is in a portion of a name space
4 reserved for function requests.

5
6 **30.** A computer system as recited in claim 28, wherein the first computer
7 process further serves the remote procedure calls by returning result data produced
8 by execution of the function to the second computer process.

9
10 **31.** A computer system as recited in claim 30, wherein returning the
11 result data comprises generating a document which includes the result data, and
12 sending the document to the second computer process.

13
14 **32.** A computer system as recited in claim 28, wherein the data file
15 retrieval protocol is HTTP.
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1 **33.** A method for serving remote procedure calls from an applet that
2 executes within an applet viewer which executes in a computer system that serves
3 the remote procedure calls, the method comprising:

4 receiving from the applet a request for a document according to a document
5 retrieval protocol implemented in the computer system; and

6 determining that the request for the document specifies a function which is
7 defined within a computer process executing independently of the applet and the
8 applet viewer and which includes computer executable instructions that, when
9 executed, perform a task which is unrelated to both generation and retrieval of any
10 document.

11
12 **34.** A method as recited in claim 33, further comprising executing the
13 function in the computer system to perform the task when receiving of the request
14 for the document.

1 **35.** A computer system, comprising:
2 one or more processors;
3 a memory component operatively coupled to the processor;
4 a computer process configured to execute in the one or more processors
5 from the memory and serve remote procedure calls received from an applet that
6 executes within an applet viewer which executes in the processor from the
7 memory concurrently and independently from the computer process, wherein the
8 computer process is further configured to:

9 receive from the applet a request for a document according to a
10 document retrieval protocol implemented in the computer system;

11 determine that the request for the document specifies a function
12 which is defined within the computer process and which includes computer
13 executable instructions that, when executed, perform a task which is
14 unrelated to both generation and retrieval of any document.

15
16 **36.** A computer system as recited in claim 35, wherein the computer
17 process is further configured to execute the function in the computer system to
18 perform the task in an event that the request for the document is received.
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